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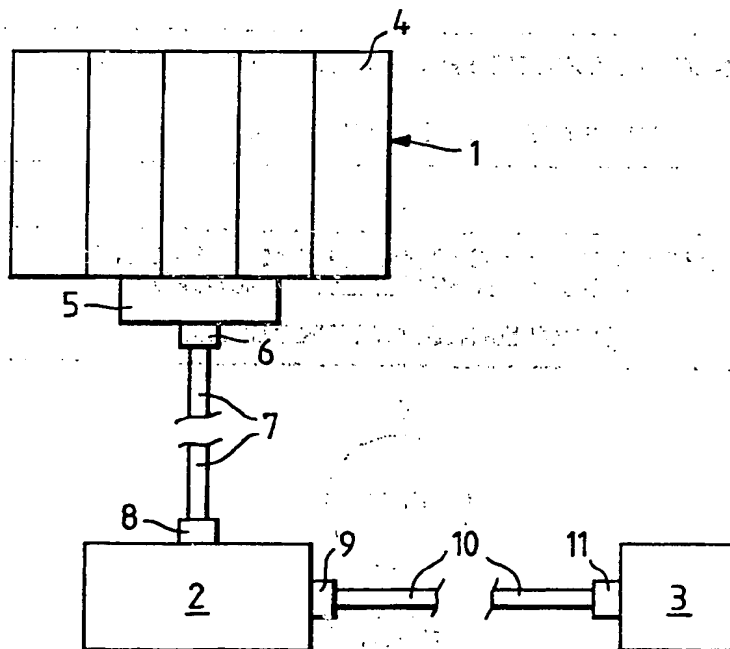
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(54) **Transmission of information in  
a gaming or amusement machine**

(57) A fruit machine includes a reel  
unit (1) with reels (4), a computing  
unit (2) and a payment actuator  
mechanism (3). The position of the  
reels at the end of a game is detected  
as an electrical signal which via a  
converter (5) drives a transmitting  
transducer (6) to emit a corresponding

light signal that is conducted through  
a fibre optic light pipe 7 to a receiving  
transducer (8) of the computing unit  
(2). The detected reel position is  
evaluated by the computing unit and  
any resulting payment instruction is  
transmitted to the payment  
mechanism (3) as a light signal via a  
second light pipe (10) interconnecting  
a transmitting transducer (9) of the  
computing unit and a transducer (11)  
of the payment mechanism (3).

Fig.1



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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

Fig. 1.

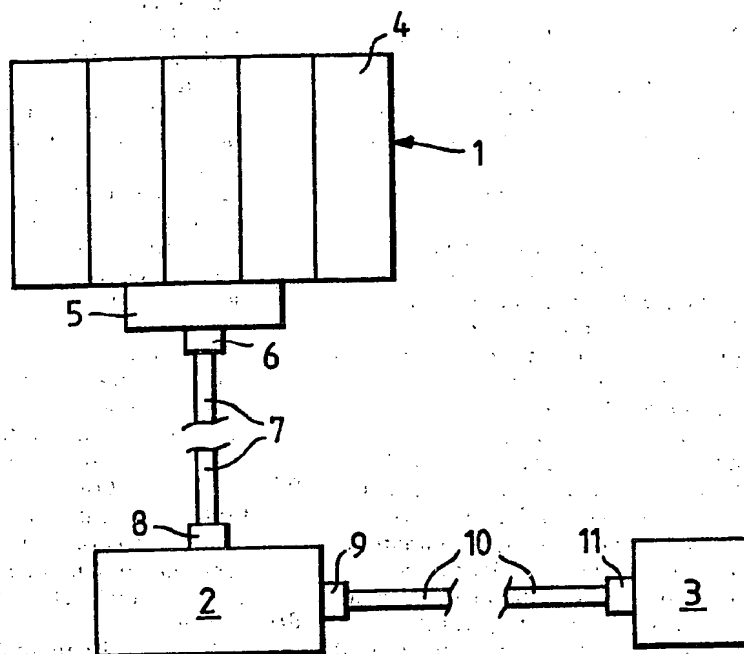
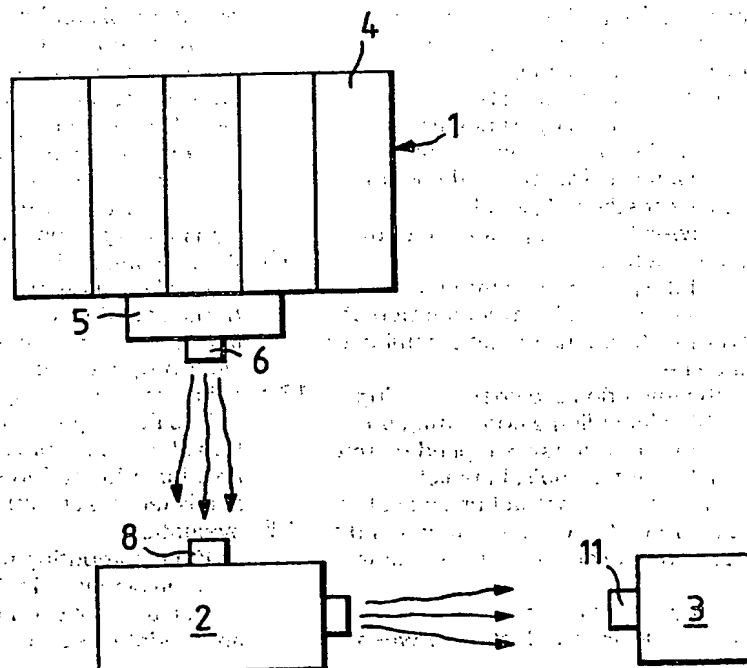


Fig. 2.



# SPECIFICATION

## Transmission of information in a gaming or amusement machine

5 This invention relates to the transmission of information and instructions within a gaming or amusement machine, such as a so-called fruit machine.

10 A fruit machine has a reel unit comprising a plurality of rotatable reels each having a number of various symbols distributed around its periphery. The reels are rotated during a game and, at the end of the game, the combination of symbols displayed in a window of the machine determines whether or not the player has won a prize.

15 In order to determine whether the reels have stopped in a winning position, the machine has sensing means for detecting the positions of the reels at the end of a game and providing an electrical position signal indicating the sensed reel positions. In modern machines, the electrical position signal is delivered to a digital computing unit, which includes a microprocessor and evaluates the reel position to determine whether it represents a winning combination and, if so, what prize is to be paid. If the reel position signal is evaluated as representing a winning combination, then the computing unit delivers an instruction signal to a payout actuator mechanism of a payout unit to cause the payment unit to pay out the appropriate prize. The reel unit and the payout unit each thus constitute a peripheral device of the computing unit.

20 The computing unit also receives information signals from, and issues instruction signals to, other peripheral devices, for example in connection with game variations or other features which the machine may offer.

25 In known machines, the transmission of information and/or instructions between the computing unit and each peripheral device is by way of electrical conductors which carry the various electrical information and/or instruction signals. However, the transmitted electrical signals and thus the machine operation are susceptible to disruption or error as a result of interfering electrical noise. Moreover, the wiring involved is relatively costly and signal transmission is slowed by the capacitance of the signal-carrying conductors.

30 It is an object of the present invention to provide for improved and reliable transmission of information and/or instructions within a gaming or amusement machine.

35 Accordingly, the invention provides a gaming or amusement machine including a computing unit for evaluating information signals supplied thereto and for issuing instruction signals, in which machine information and/or instructions signals are transmitted between the computing unit and a peripheral device in the form of electromagnetic wave signals.

40 In one form of the invention, the electromagnetic signals are conducted between

45 the computing unit and the peripheral device by means of a waveguide. In another form of the invention, the electromagnetic signals are freely radiated through the air between the computing device and the peripheral device.

50 A fruit machine embodying the invention comprises a reel unit in which the position of the reels is sensed at the end of a game and a position information signal is transmitted to the computing unit in the form of an electromagnetic signal for evaluation by the computing unit which transmits a payout instruction signal in the form of an electromagnetic signal to a payout actuator mechanism in the event that the sensed reel position indicates a winning combination of symbols on the reels.

55 In order that the invention may be readily understood, an embodiment thereof will now be described, by way of example, with reference to the accompanying drawing, in which:

60 FIGURE 1 diagrammatically illustrates part of a fruit machine in which transmission of information and instructions is performed in accordance with a first embodiment of the invention by guided electromagnetic signals; and

65 FIGURE 2 diagrammatically illustrates part of a fruit machine in which the transmission of information and instructions is performed in accordance with a second embodiment of the invention by freely radiated electromagnetic signals.

70 Referring firstly to Figure 1, a fruit machine includes a reel unit 1, a computing device 2 and a payment actuator mechanism 3.

75 The reel unit 1 comprises a plurality of reels 4, for example up to 5 reels, each of which has a number of different symbols (not shown) distributed around its periphery. During a game the reels are rotated and, at the end of a game, the combination of symbols displayed in a window (not shown) of the machine determines whether or not the player has won a prize.

80 The position of the reels at the end of a game is detected by suitable sensing means which provide an electrical position signal in the form of parallel signals representing the individual reel positions. The electrical reel position signal is converted by converter 5 on the reel unit 1 into a serial form which is used to drive a first electro-optical transmitting transducer 6 which is mounted on the reel unit and emits a light signal representing the reel position information. The light signal from transducer 6 is transmitted into a first fibre-optic light pipe 7 which conducts the signal to a first electro-optical receiving transducer 8 mounted adjacent to the computing unit 2.

85 The light signal received by the receiving transducer 8 is converted back into an electrical position information signal by the transducer 8 and is fed directly into the computing unit 2 for evaluation.

90 If the computing unit 2 evaluates the reel position signal as indicating a winning combination of symbols in the reel unit 1, then an appropriate electrical instruction signal is

delivered by the unit 2 to a second electro-optical transmitting transducer 9 which emits a corresponding light signal into a second fibre-optic light pipe 10 leading to a second electro-optical receiving transducer 11 disposed at the payout actuator mechanism 3 which responds to pay out the appropriate prize. The second receiving transducer 11 may simply produce an output electrical signal corresponding to the incident light signal for actuating a further electrically triggered device to effect payout. Alternatively and preferably, the transducer 11 may be an optically sensitive payout control device, such as a light-sensitive triac, which responds directly to the light signal from the second transmitting transducer 9. For example, the signal may be such as to fire the triac five times to pay out a 50p win in 10p wins. The power for the payout mechanism is derived from the normal payout mechanism supply voltage of 50V.

Although reference has been made to "light" signals in the above description of Figure 1, it will be appreciated that the invention is not limited to the use of visible light and the information and instructions may be conveyed between the transducers by any electromagnetic radiation within the bandwidth of the transducers. For example, it is envisaged that laser, infra-red, ultraviolet and white light could all be used in suitable circumstances.

Figure 2 shows a second embodiment of the invention, in which the transmission of information from the reel unit 1 to the computing unit 2 and of instructions from the computing unit to the payout actuator 3 is performed by electromagnetic signals which are freely transmitted between the transducers through the air. In other respects the operation of the second embodiment is the same as that of the

embodiment of Figure 1.

#### CLAIMS

1. A gaming or amusement machine including a computing unit for evaluating information signals supplied thereto and for issuing instruction signals, in which machine information and/or instructions signals are transmitted between the coupling unit and a peripheral device in the form of electromagnetic wave signals.
2. A machine according to claim 1, in which the electromagnetic signals are conducted between the computing unit and the peripheral device by means of a waveguide.
3. A machine according to claim 1, in which the electromagnetic signals are freely radiated through the air between the computing device and the peripheral device.
4. A fruit machine according to any one of claims 1 to 3, comprising a reel unit in which the position of the reels is sensed at the end of a game and a position information signal is transmitted to the computing unit in the form of an electromagnetic signal for evaluation by the computing unit which transmits a payout instruction signal in the form of an electromagnetic signal to a payout actuator mechanism in the event that the sensed reel position indicates a winning combination of symbols on the reels.
5. A fruit machine substantially as hereinbefore described with reference to Figure 1 of the accompanying drawings.
6. A fruit machine substantially as hereinbefore described with reference to Figure 2 of the accompanying drawings.
7. Any novel feature or combination of features herein described.